ARMY GROUND RISK-MANAGEMENT INFORMATION

Countermeasure

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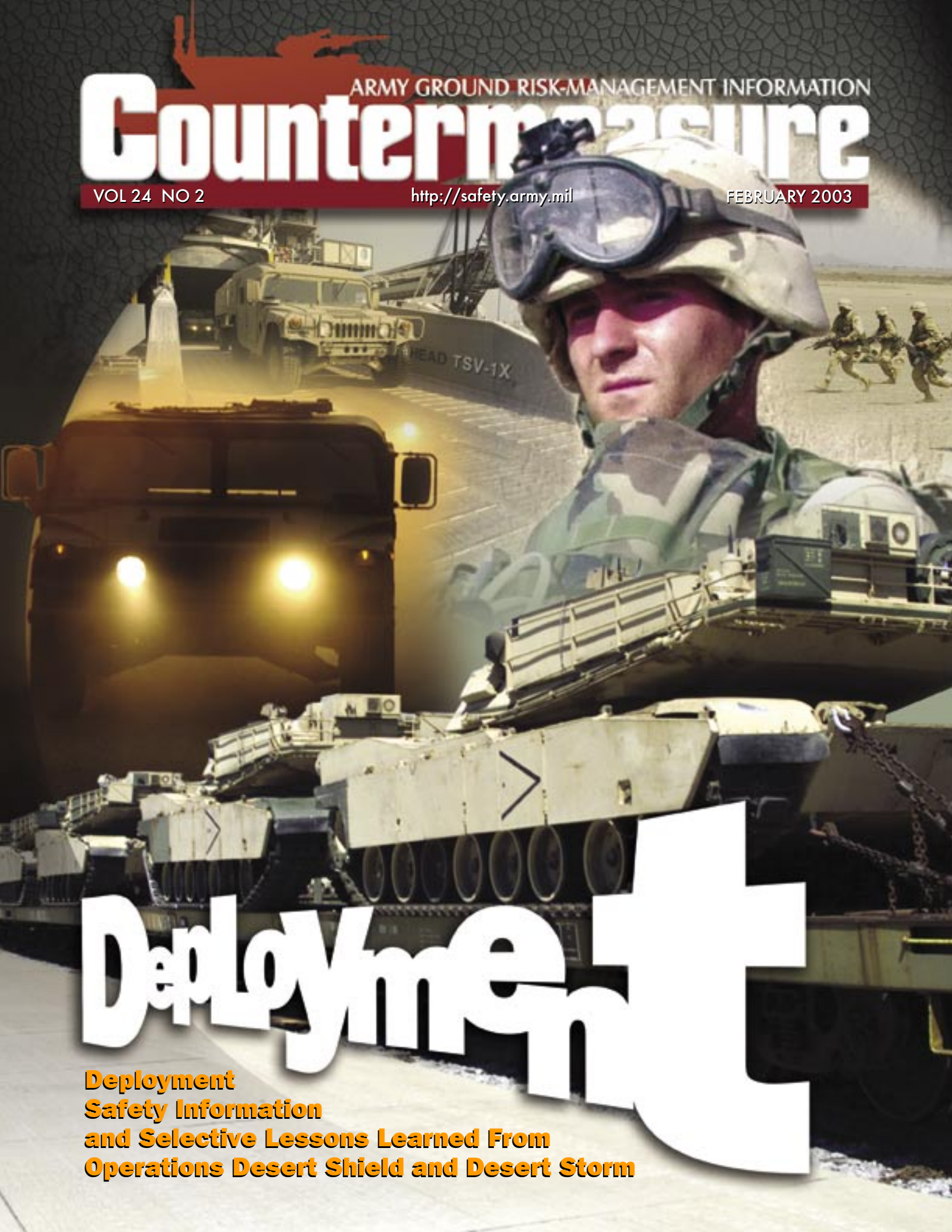

Deployment

Deployment Safety Information and Selective Lessons Learned From Operations Desert Shield and Desert Storm

Countermeasure
ARMY GROUND RISK-MANAGEMENT INFORMATION

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U.S. ARMY SAFETY CENTER

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DASAF'S CORNER

From the Director of Army Safety

Leading Is Not Always Easy, but Profoundly Rewarding

Conditions and situations that can tax even the most seasoned leader's skills abound in our Army today: uncertain world situations, multiple training and real-world missions and tasks, transformation of unit formations, testing and fielding of new weapons systems, back-to-back deployments to training centers and theaters of operation. In the midst of all these changes and uncertainties, leadership still encompasses the awesome responsibility of ensuring the combat readiness of our units and the safety of our soldiers.

Safe operations are dependent upon effective command and control. Leaders are multi-tasked with all of the administrative and command responsibilities associated with running a unit *and* finding time to be present with their units during training to help them understand where we are at risk. Whether it is a training mission or a real-world combat mission, leaders can make a huge difference in their unit's safety performance by being actively involved in the planning, preparation, and execution of the mission.

Despite the inherent challenges of tough, realistic training and the adverse conditions encountered on the battlefield, we can keep accidental losses to a minimum. We can train hard and we can execute combat missions safely if we successfully integrate risk management into planning and preparations. As leaders, NCOs, and soldiers, we can excel in safety performance and mission accomplishment by aggressively managing risks and executing missions to established standards.

Good training produces tough, disciplined, and highly motivated soldiers. When given a mission, soldiers will accomplish it. But we must ensure that our soldiers are disciplined to execute that mission to an established standard. Any shortcut, lapse in discipline (individually or collectively within the unit), or a failure to execute to standard is stepping on the fast track to an accident and a price much higher than we are willing to pay. If we mold disciplined soldiers, they will accept responsibility for their own safety, the safety of others, and the protection of valuable Army equipment. Being a leader who is a stickler for maintaining discipline on even seemingly minor issues may not make you popular within the unit today, but what soldiers really want is consistent leadership.

Sometimes, despite our best efforts to safeguard our soldiers, breakdowns in managing risks do happen and we lose soldiers in combat and in costly accidents. At the end of the first quarter of FY03 we had 16 Class A on-duty accidents with 15 fatalities, compared to 8 in FY02 and 9 fatalities. On a more positive note, our off-duty Class A accidents and fatalities were down: 24 Class A accidents versus 29 for first quarter FY02 and 24 fatalities versus 33. Of those 24 fatalities, 21 resulted from POV accidents.

With every fatality—accidental or combat loss—comes the hardest part of being a leader: helping the victim's family and helping the unit deal with the loss. All of leading is not about supervising the loading of trains and airplanes; it includes dealing with the sad realities of combat losses and losing soldiers to accidents that should have been prevented.

Effectively leading soldiers and managing risks appropriately make it possible for us to conduct tough, realistic training and operational missions while minimizing losses. Leading never will be an exact science with textbook solutions that can be applied to every situation. However, using the risk management process provides us with an invaluable tool to help execute exemplary training safely and conduct successful battlefield operations with minimal losses.

Knowing that soldiers' lives often depend on our risk assessments and decisions makes leading the sometimes overwhelming, intimidating, and difficult task that it is. But even though leading is not always easy, leading great soldiers—and leading them safely—is one of the most profoundly fulfilling jobs an individual can be blessed with the opportunity to do within our Army.

Train Hard, Be Safe!
BG James E. Simmons

Going Somewhere?

Many of you are either in or on your way to a desert environment and the many different problems associated with living and fighting in it. Throughout history Greek, French, British, and American forces have learned and relearned the problems associated with desert operations. Most recently, our experience in Operations Desert Shield and Desert Storm provided numerous lessons learned that were captured in after-action reports. Fortunately, we have the ability to use those lessons and not relearn them the hard way.

It should be remembered that the principles and fundamentals of combat do not change in the desert. Priorities may alter, techniques will vary from those in temperate climates; but soldiers, leaders, and units who are fit and well-trained to fight in other environments will have little difficulty adjusting to desert warfare. This article highlights certain unsafe situations or hazards, many of which led to accidents, and offers suggestions on ways to eliminate or control these unsafe situations before they cause accidents again. Safety, survival, knowledge, and common-sense thinking will lead to mission accomplishment.

Deployment

Situation: Individuals abandoned safety in an effort to establish "combat posture."

- Ensure that all personnel know and use the five-step risk-management process in all operations.
- Establish a command climate from the outset that promotes safety. Begin by establishing a safety network and designating safety personnel.
- Enforce standards and require all personnel to perform to standard in all operations.

Situation: Unsafe loading and shipment. Examples of violations include failure to identify and mark containers, mixing Class A explosives with incompatible Class C ammunition, corrosives improperly certified and mixed with unidentified hazardous lubricants, MRE rations and undocumented insecticides on same pallet, lack of MILSTAMP advanced cargo clearance, improper storage, and improper security.

- Train load teams to standard.
- Use Quality Assurance Specialist Ammunition Surveillance (QASAS) support.
- Nesting all equipment and supplies inside vehicles to deal with rough port handling and high seas.
- Comply with Air Force Regulation (AFR) 71-4 in airlift of hazardous material and with guidelines in Technical Manual (TM) 38-250 (11 December 2001).
- Ensure that vehicles have required tiedown shackles.
- Keep personnel out from under equipment being lifted aboard ship.
- Coordinate and understand requirements for "topping off" vehicles prior to shipment.
- Coordinate port of embarkation shipping requirements for bulk fuel and petroleum, oil, and lubricants tank transporters through the servicing installation transportation office.
- Ensure that vehicle master switches are turned OFF immediately after loading.

Situation: Chemical agent resistant coating (CARC) used to repaint vehicles for deployment.

• Ensure that CARC painting is done in accordance with established requirements.
• Caution users that CARC is flammable.
• Caution users that CARC is toxic and exposure can lead to respiratory problems.
• Ensure that users wear proper personal protective equipment.

Human factors

Situation: Air travel caused dehydration and fatigue.

• Encourage hydration before and during air travel.
• Ensure that arriving troops are given the opportunity to rehydrate and rest before being assigned duties.

Situation: Lack of depth perception in desert environment.

• Stress that lack of contrast in terrain features reduces depth perception.
• Ensure vehicle drivers follow proper ground-guide procedures.

Situation: Soldiers performing strenuous manual labor.

• In general, 2 weeks are required to adjust to the humidity and extreme heat.
• Remind soldiers to avoid strains and lifting injuries by using proper lifting techniques (lift with the legs, not the back) and getting help with heavy loads.

Aviation operations

Situation: Aviation units have problems maintaining standardization.

• Deploy standardization and safety personnel with the advance party.
• Develop unit training program to address new operational hazards.
• Establish a deployment library and take essential maintenance, operational, and training regulations and safety publications.

Situation: Night vision goggle operations in desert environment.

• Operate according to the crawl-walk-run philosophy, especially in an unfamiliar environment.
• Conduct detailed planning and mission briefings regardless of pilot experience.
• Establish all crewmember duties.
• Identify crew coordination requirements, especially during critical phases of missions.
• Remind crews that continuous scanning is a must and that the pilot on the controls must "stay outside."

- Require that all crewmembers assist in obstacle clearance.
- Remind aircrews that airspeeds must be adjusted downward during low illumination and visibility conditions and in areas of little or no contrast (go low, go slow).

Situation: Failure to establish Emergency Helicopter Instrument Recovery Procedures (EHIRP).

- Establish EHIRP for area of operation.
- Include EHIRP in mission briefings (unit standing operating procedure).
- Spell out crew duties and crew coordination requirements.

- Execute unannounced EHIRP whenever possible.

Situation: Failure to conduct local-area operation surveys.

- Survey area of operation, and establish hazard maps and restricted flight areas as first order of business.
- Brief manmade and natural hazards and obstacles for every mission.
- Brief all crewmembers on their responsibility for scanning to detect hazards and obstacles and to inform the pilot on controls.

Situation: Uncommanded launch of ordnance from aircraft.

- Ensure that aircraft are downloaded or in a safe area when performing inspections or maintenance on weapons systems.
- Ensure that weapons are oriented away from other aircraft, troops, and facilities.

Ground operations

Situation: Vehicle operations result in accidents.

- Ensure driver and vehicle commander understand the responsibilities for safe vehicle operation; e.g., establishing and enforcing safe vehicle operations based on personnel, training, terrain, environment, and equipment.
- Ensure drivers are trained and licensed on the vehicle they are operating (check Optional Form 346).
- Ensure soldiers drive defensively.
- Remind drivers to clear all sides before turning.
- Remind drivers not to allow passengers to ride on the outside of any vehicle unless it is command-directed.
- Caution drivers to use extra care when operating off improved roads; sand dunes drop off abruptly on the leeward side.
- Check loads to ensure cargo is secured correctly. Stress even load distribution, especially when traveling over sandy terrain.
- Train soldiers on rollover procedures in the vehicles in which they operate and practice rollover drills.
- Instruct tracked-vehicle commanders to ride no higher than name tag defilade.
- Enforce seatbelt and Kevlar requirements.
- Establish and enforce safe convoy and catch-up speeds for expected road and environmental conditions and include in the

pre-march briefing. Remind drivers that driving too fast for conditions is a primary cause of accidents.

- Train drivers in the correct use of ground guides and train *all personnel* in how to perform as ground guides. Remind drivers to always use two ground guides while backing.
- Recon routes for mountain passes or any sharp turn that might require special control measures, as well as bridges or underpasses that may be too low for large vehicles.
- Train drivers of M915 series vehicles in braking procedures.

- Train crews on vehicular fire drills and practice drills.
- Caution drivers that roads, bridges, and overpasses may not be posted with weight or height restrictions.
- Require safety briefings for senior occupants as well as vehicle drivers.
- Require the use of 10-foot extension hoses for inflating and deflating split-rim tires.

Situation: Not enough attention to weapons safety.

- Review fratricide-prevention procedures.
- Remind soldiers to handle all weapons as if loaded.
- Caution soldiers not to play with knives.
- Do not allow target practice and blank ammunition to be mixed.
- Caution soldiers not to burn ammo boxes and to handle them with gloves; some are treated with PCP, which is toxic.
- Execute drills on rules of engagement.

Situation: Unsafe fuel handling and burning.

- Use Field Manual 21-10 for guidance on proper fuel mixtures.
- Ensure that fuel is not used as a substitute for cleaning solvents.
- Prohibit burning of aerosol cans and unopened MRE packages—they will explode.
- Train soldiers in the process of burning human waste.

Situation: Eye exposure to sunlight degrades night vision.

- Enforce the wear of Ballistic Laser Protection System (BLPS). The sunglasses will reduce the adverse effects of sunlight on night vision. The sunglasses and clear lens also will protect against eye injury.
- If BLPS are not available, allow soldiers to wear sunglasses during the day to protect against night vision degradation.

For more information on general deployment safety, check these excellent references:

Aviation/Ground Operations: http://safety.army.mil; click on the TOOLS tab; scroll down to Leaders' Guides and Handbooks. The Safety Center has many publications developed in support of Operations Desert Shield and Storm: *Desert Shield Leader's Safety Guide*, *Southwest Asia Leader's Safety Guide*, and *Redeployment and Port Operations Leader's Safety Guide*.

The Center for Army Lessons Learned (CALL) Web site, http://call.army.mil, also has several publications on lessons learned during desert operations. The first is Newsletter No. 90-7, August 1990, *Winning in the Desert*, Newsletter No. 90-8, *Winning in the Desert II*, and Newsletter 90-11, December 1990, *Getting to the Desert*.

Other Web sites pertinent to deployments:
http://hppm-www.apgea.army.mil
http://tri.army.mil
http://deploymentlink.osd.mil

Human factors: www.hqmc.usmc.mil/safety.nsf.

POC: Paula Allman, *Flightfax* Managing Editor, DSN 558-9855, (334) 255-9855, e-mail paula.allman@safetycenter.army.mil

Does your unit need risk management training and information to better prepare your officers and NCOs to conduct tough missions safely? Current world events have intensified the need to ensure we are tactically and technically proficient in all areas. Don't forget that you have some excellent sources for help. You don't have to go anywhere...the training comes to you. More comprehensive information is available on our Web site at **http://safety.army.mil**.

NCO Risk Management and Safety Training

The intent of this training is to teach safety to NCOs, not to produce a safety NCO. NCOs are the leaders on the ground "where the rubber meets the road" and are most likely to have a direct impact on accident prevention. Therefore, the U.S. Army Safety Center has designed a 5-day, 45-hour course focused on hazard identification and risk management. The target audience is sergeants and staff sergeants who will be able to integrate risk management into both the planning and execution phases of training and operational missions.

Junior Officer Professional Development

This course is tailored to the junior officer level of responsibility. The 3-day, 24-hour course is focused on hazard identification, risk management, the Army Safety Program, and leader responsibilities. The target audience is the young company grade officer or warrant officer technician charged to integrate risk management into both the planning and execution phases of training and operational missions.

Assistance Visit Program

USASC offers a nine-event, unit-tailored visit to provide training in risk management and risk management integration, POV toolbox application, ground and aviation systems safety, and driver's training program applications. Units identify their requests and USASC tailors a team of subject-matter experts to address the areas of concern.

Risk Management Information System (RMIS)

From this site, you can get detailed information on the types and kinds of accident hazards, risks, and controls for your area of operations. You can even get accident prevention lessons learned from Desert Storm or major training exercises. You can apply for a password at our Web site above or by calling DSN 558-2920.

If you would like to schedule a visit or if you have questions on course content, contact SFC Pat Stoker, DSN 558-9854/9579 (334-255-9854/9579).

Lessons Learned in Light and Heavy Force Integration

What happened?

While moving forward to assist with a company obstacle breaching operation at night, the driver of an M1A1 Abrams Main Battle Tank equipped with a mine clearing blade was instructed by the tank commander to proceed around the right side of a stationary tank sitting 20 to 30 meters to their direct front. The driver, as instructed, proceeded 6 to 8 feet to the right of the stationary tank. As a result, the right-side track of the tank rolled over two Infantry soldiers, who both sustained fatal injuries.

Why did it happen?

A number of factors contributed to this accident, a few of which will be discussed briefly. The units involved in the accident had little experience with light and heavy force integration. They had not included similar light and heavy forces in training exercises at their home station before the maneuver training center rotation. As a result, the light and heavy forces were not adequately familiar with their respective capabilities and limitations. For example, the Infantry soldiers were not aware of the low-decibel noise level characteristics associated with an operating M1A1 engine and movement of the tank's tracks in various terrain conditions, particularly in the tank's front area.

The crew of one of the M1A1 tanks lost situational awareness as a result of inadequately marked Infantry soldiers. Proper markings would have enhanced the ability of the tank's crew to identify the soldiers through night vision devices, such as the driver's night sight, during zero-percent illumination.

The chain of command did not provide a detailed location of the Infantry soldiers during this time period and failed to implement the requisite ground guide procedures in accordance with (IAW) the Exercise Rules of Engagement (EXROE) as tracked vehicles maneuvered in close proximity to the Infantry soldiers. Light and heavy forces were not adequately integrated into rehearsals at the company level. Additionally, the team commander assumed that since all vehicles preceding the involved tank were moving along the left side of the stationary tank as they proceeded to the obstacle area, that the mishap tank also would move along this same route.

What to do about it?

1. Ensure that adequate light and heavy force integration training is conducted before maneuver training center rotations and other operations.

2. Ensure that a dismounted soldier marking system easily detectable by infrared (IR) and thermal systems is implemented during light and heavy force integration to enhance situational awareness and command and control.

3. Conduct in-depth rehearsals with all necessary team elements and ensure that procedures to enhance situational awareness during light and heavy force integration are embedded.

POC: Ground Systems and Accident Investigation Division, DSN 558-3562, (334) 255-3562

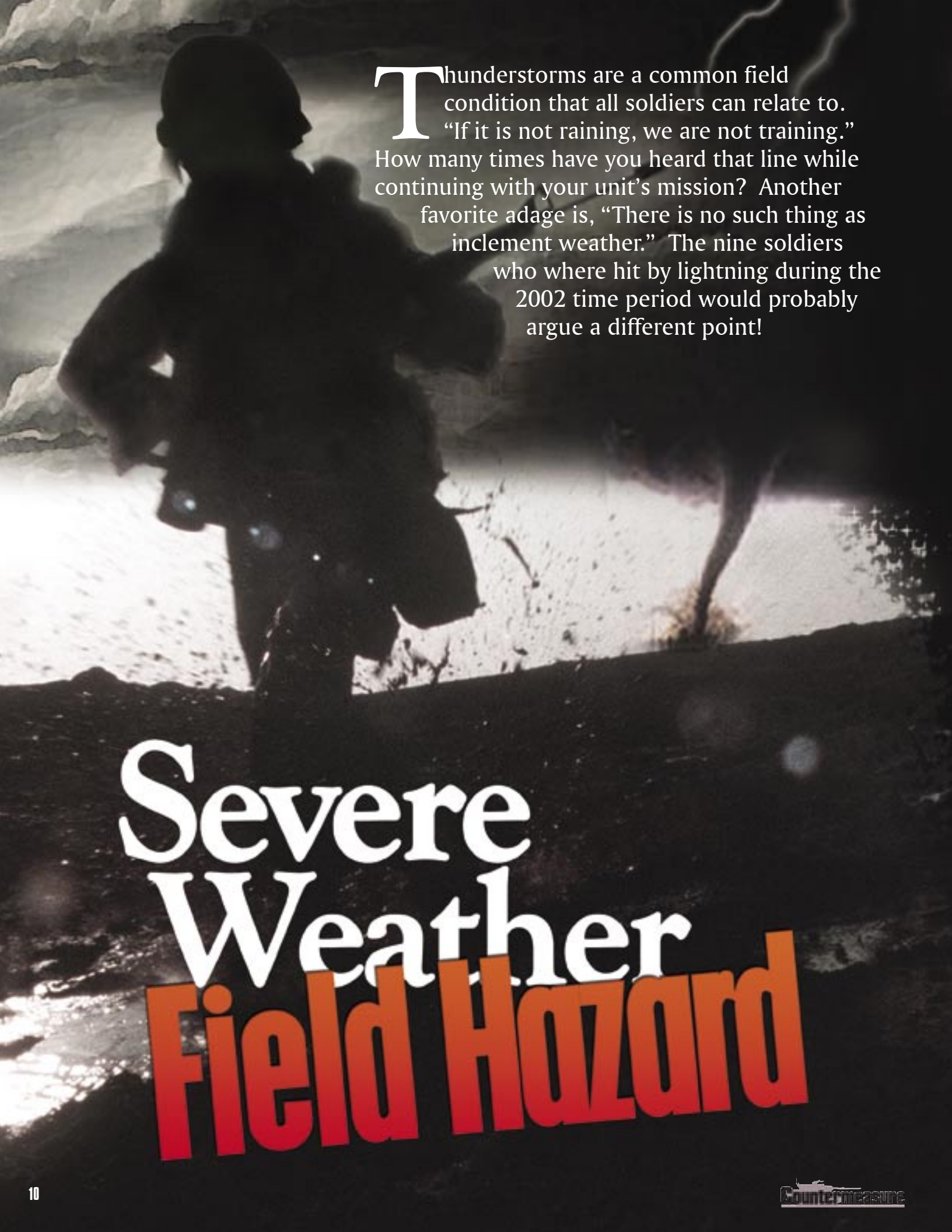
HAZARDS

- Reduced situational awareness as a result of inadequately marked Infantry soldiers
- Haste during obstacle breaching operations
- Inadequate light and heavy force integration prior to a major training event

CONTROLS

- Integrate marking systems into tactical operations to enhance situational awareness and command and control
- Ensure haste does not overcome the ability to disseminate the location of forces during light and heavy operations
- Ensure adequate light and heavy force integration training is conducted prior to major training center rotations and other operations

RESULTS 2 fatalities



Thunderstorms are a common field condition that all soldiers can relate to. "If it is not raining, we are not training." How many times have you heard that line while continuing with your unit's mission? Another favorite adage is, "There is no such thing as inclement weather." The nine soldiers who where hit by lightning during the 2002 time period would probably argue a different point!

Severe Weather Field Hazard

As more units depart the garrison environment for field training exercises and local area training, leaders need to be aware of the hazards that accompany their troops' stay. Depending on location, certain weather conditions could be a constant. Severe weather is a hazard that all leaders should be well aware of during risk assessment and planning, and the spring and summer months present a variety of weather-related risks to the training environment. The Soldier's Manual of Common Tasks (STP 21-24-SMCT), Skill Levels 2 through 4, Task 850-001-2001, "Assess Potential for Accidents," states that a risk assessment must consider environmental conditions such as weather that could increase accident potential.

One of the most common weather phenomena encountered in the field is thunderstorms. Potential hazards like lightning and hail are common with most thunderstorms. Thunderstorms become severe when winds reach 57.5 mph or faster, or when hail three-quarters of an inch in diameter or larger is present with the increased winds. The strong winds and large hail are increased dangers with severe thunderstorms, and the additional hazards of flooding and tornadoes also are cause for concern.

Whether in field training or in garrison training, the best method to maintain situational awareness is to monitor weather reports. This usually is accomplished in the field via the chain of command and tactical operations centers receiving routine weather data as part of operations. However, if the National Weather Service has deemed weather severe enough to put out a watch or warning, then your chain of command usually will provide more guidance on unit actions. If you do not have access to immediate weather data, you can rely on your own judgment and still take appropriate measures to prevent or limit risk to you and your soldiers.

If you are caught outside in a thunderstorm with lightning, seek shelter in a sturdy structure or a hard-top vehicle. If you find yourself in a metallic-type vehicle, sit with your hands in your lap. Electronic communications equipment should be shut off, if possible. Do not use communications equipment unless you have to. If you are inside a building equipped with a telephone, do not use it unless it is necessary.

Avoid large metallic pieces of equipment, and make risk decisions concerning vehicles that are loaded with various types of explosives or ammunition. Each type of explosive or ammunition has a different explosive radius for fragmentation and damage. Keep this in mind when making a call on how far to clear away.

"If you see lightning, begin counting seconds; if you hear thunder within 30 seconds, you are in a hazard area."

When caught out in the open with no place to go and lightning is striking, ensure that you are not close to tall trees or structures that represent the highest points in an area. In a wooded area, seek shelter under a thick growth of small trees. Avoid tall objects, isolated trees, bodies of water, sheds, and fences. If you are part of a group, spread out and squat down in an attempt to keep as low a profile as possible while keeping both feet planted firmly on the ground. (Do not sit or lie on the ground.) The tactical situation dictates other types of mitigation; for instance, radio operators should take down long whip antennas. This will help in creating that low profile.

Fighting positions create a unique point of interest. During lightning storms you should make sure that you are not leaning or resting your body on the inside of the hole. Center yourself and remain alert until the

storm passes. A properly constructed fighting position will provide you with overhead cover from hail and high winds, and you will have the lowest possible profile.

Keep in mind that most lightning strikes occur after the thunderstorm has passed. Wait approximately 30 minutes after the storm passes to resume activities. A general rule of thumb in estimating the hazard area for lightning strikes is flash-to-bang time. If you see lightning, begin counting seconds; if you hear thunder within 30 seconds, you are in a hazard area. If your hair begins to stand on end, squat down immediately and place your hands on your knees with your head between your legs.

Tornadoes are a violent atmospheric condition with winds ranging from 200 to 300 mph in the most severe cases. If you find yourself or your unit caught out in the field when a tornado hits, here are a few guidelines:

- Seek shelter immediately.
- Avoid trailers or vehicles.
- Do not attempt to out run a tornado in a vehicle; instead, abandon it immediately.
- Seek shelter in a substantial structure and go to the basement or an interior room.

If no shelter is available and you are caught

Did You Know?

Lightning kills or injures hundreds of people each year, and many people do not know the dangers lightning poses. It is important to know that the single-best way to protect yourself in a lightning storm is to seek shelter indoors. In addition, you also should know how frequently thunderstorms occur in your area, because they occur in every state—Florida, for example, has the highest incidence of lightning in the U.S. Regions along the Pacific West Coast have the least cloud-to-ground lightning.

Just because you cannot see a cloud does not mean that the danger is not still present. Lightning has been known to strike more than 10 miles from a storm in an area of clear sky above, and the longest bolt of lightning ever recorded was 118 miles long! An average of 20,000,000 cloud-to-ground flashes are recorded annually in the 48 continental states, with about half of all flashes having more than one ground strike point.

Many myths about lightning add to the confusion surrounding this beautiful, yet deadly, phenomenon. Take the "true or false" quiz below and see how enlightened you are!

Lightning always strikes the tallest object.

False! Lightning strikes the best conductor on the ground, not necessarily the tallest object. In some cases, the best conductor could be a human being.

A car's rubber tires give it protection from lightning.

False! Actually, the car itself is very well insulated and offers more protection than being outside in the storm. Of course, the exception to this rule is the convertible, which provides virtually no protection from lightning.

Lightning never strikes the same place twice.

False! Many structures have been struck many times by lightning, including the Empire State Building.

Adapted from The Weather Channel Project SafeSide Web site, www.weather.com, and the National Severe Storms Laboratory Web site, www.nssl.noaa.gov

in a convoy, dismount and lie flat in the nearest ditch or depression. Be sure to maintain your Kevlar helmet and other protective items to prevent injury from flying debris. In a defensive position or base camp, a properly constructed fighting position will place you below the ground with overhead cover if suitable structures are not available to take shelter in.

Flash floods are another hazard that comes with storms. You may not even have to be the area receiving the rain for this particular hazard to strike. When selecting sites to set up operations, stay clear of low-lying areas and dry river beds, or river flood plains and canyons. If you are caught outside in a flash flood, move to higher ground immediately. Avoid rivers, streams, and low spots. Do not try to walk through flowing water over ankle-deep, and do not attempt to drive through flooded areas. Hazards under the water are not visible, and water that is over 1 foot in depth can easily displace 1,500 lbs—just 2 feet of water will move or carry most automobiles.

These are just a few general tips. Depending on your particular circumstances, you may wish to conduct further research into what you can do as a leader when faced with changing weather that will affect your unit's mission outcome.

Fortunately, thunderstorms typically last less than half an hour. Now that you are aware of some of the hazards that weather can add to your risk assessment, you will be better prepared to implement the factors you need to mitigate that risk. Train hard and train safe—train as you fight!

POC: SFC Raymond Hamilton, Ground Systems and Accident Investigation Division, DSN 558-2933, (334) 255-2933, e-mail raymond.hamilton@safetycenter.army.mil

Stay Informed With Weather Radio

The National Oceanic Atmospheric Administration (NOAA) Weather Radio (NWR) is a nationwide network of radio stations broadcasting continuous weather information direct from a nearby National Weather Service office. NWR broadcasts National Weather Service warnings, watches, forecasts, and other hazard information 24 hours a day.

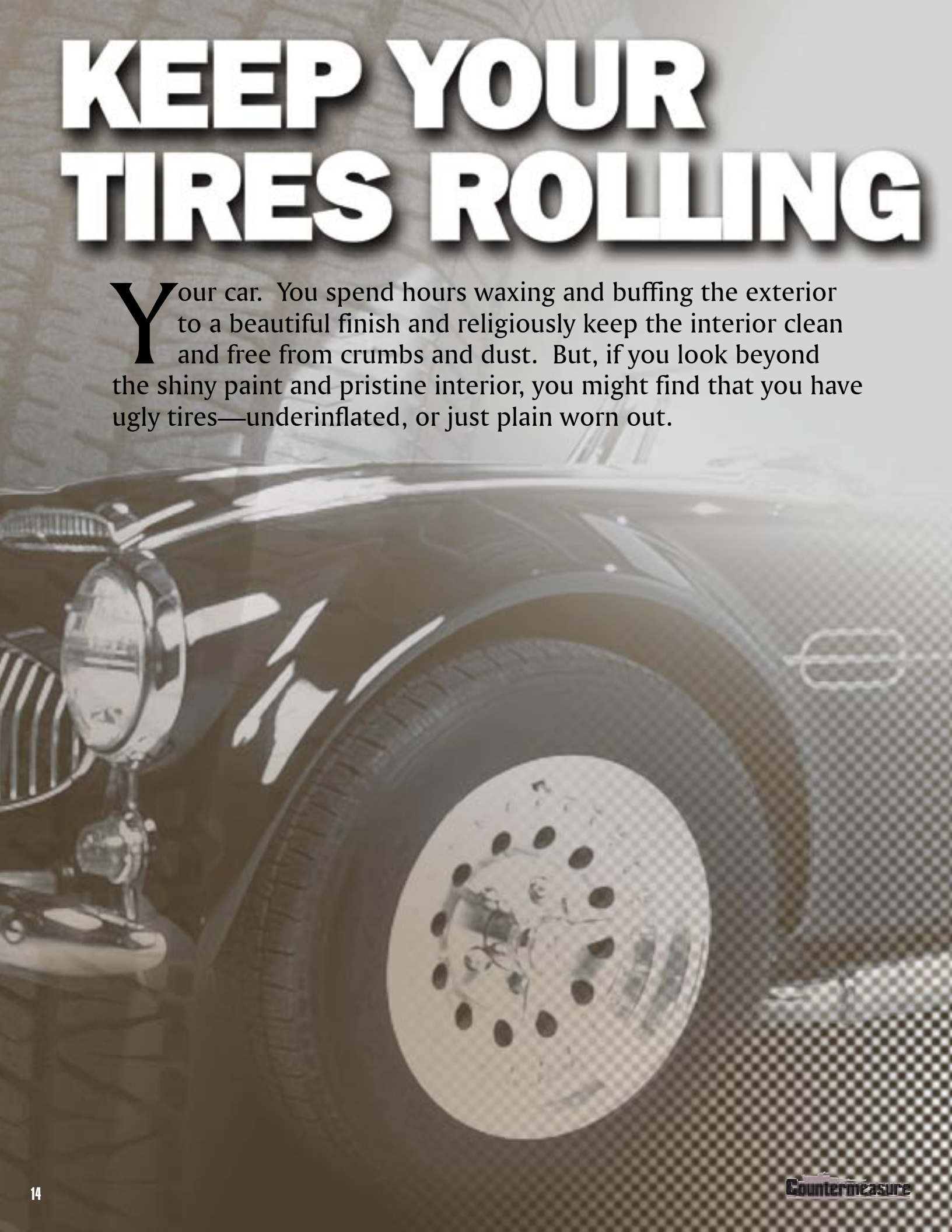
Working with the Federal Communication Commission's (FCC's) Emergency Alert System, NWR is an "all hazards" radio network, making it your single source for comprehensive weather and emergency information. NWR also broadcasts warning and post-event information for all types of hazards, both natural (such as earthquakes and volcanic activity) and environmental (such as chemical releases or oil spills).

Known as the "Voice of the National Weather Service," NWR is provided as a public service by the NOAA, a part of the Department of Commerce. NWR includes more than 750 transmitters covering all 50 states, adjacent coastal waters, Puerto Rico, the U.S. Virgin Islands, and the U.S. Pacific Territories. NWR requires a special radio receiver or scanner capable of picking up the signal. Portable and stationary weather radio receivers can be found online or at electronic stores for about $40 to $100. Broadcasts are found in the public service band at these seven frequencies (MHz): 162.400; 162.425; 162.450; 162.475; 162.500; 162.525; and 162.550.

Adapted from information found on the National Weather Service Web site, www.nws.noaa.gov

KEEP YOUR TIRES ROLLING

Your car. You spend hours waxing and buffing the exterior to a beautiful finish and religiously keep the interior clean and free from crumbs and dust. But, if you look beyond the shiny paint and pristine interior, you might find that you have ugly tires—underinflated, or just plain worn out.



The most important aspect of your car is not its looks, it is safety, and safety is more than skin-deep. Your tires are a vital part of vehicle safety. Americans do a lot of driving: in 1999, 2.4 trillion miles were driven by non-commercial vehicles in the U.S., with 647 tire-related deaths recorded during that same year.

All four of your vehicle's tires, plus the spare, should be checked once a month and before every long trip to ensure their PARTs are in proper and safe working order:

Pressure—underinflation results in unnecessary tire stress, irregular wear, loss of control, and accidents. A tire can lose up to half of its air pressure and not appear to be flat!

It is important to have the proper air pressure in your tires, as underinflation could lead to tire failure. The right amount of air for your tires is specified by the vehicle manufacturer and is shown on the vehicle door edge, door post, glove box door, fuel door, or owner's manual. Before checking your tires, observe the weather: air pressure in a tire goes up (in warm weather) or down (in cold weather) 1 to 2 pounds for every 10 degrees of temperature change.

When checking air pressure make sure the tires are cool, meaning they are not hot from driving even a mile. If you have to drive a distance to get air, check and record the tire pressure first and add the appropriate air pressure when you get to the pump. It is normal for tires to heat up and the air pressure inside the tire to go up as you drive. Never "bleed" or reduce air pressure when tires are hot.

If you overfill a tire, release air by pushing on the metal stem in the center of the valve with a fingernail or the tip of a pen. Then recheck the pressure with your tire gage. Visually inspect the tires to make sure there are no nails or other objects embedded that could poke a hole in the tire and cause an air leak. Also check the sidewalls to make sure there are no gouges, cuts, bulges, or other irregularities.

Alignment—A bad jolt from hitting a curb or pothole can throw your front end out of alignment and damage your tires. If your car's suspension is out of alignment, your tires will wear unevenly and you could experience handling problems. Have a tire dealer check your alignment periodically as

specified by your vehicle owner's manual or if handling problems develop, such as pulling or vibration. Remember that front-wheel drive vehicles, as well as those with rear suspension, require alignment of all four wheels. In addition to alignment, also have your tire balance checked periodically—an unbalanced tire and wheel assembly could result in irregular wear.

Rotation—Regularly rotating your vehicle's tires will help you achieve more uniform wear. Each tire on your car supports a different amount of weight, and this uneven weight distribution causes your tires to wear at different rates. By rotating your tires, you can extend their useful life. Unless your vehicle owner's manual has a specific recommendation, the guideline for tire rotation is approximately every 6,000 miles. If your tires show uneven wear, ask your tire dealer to check for and correct any misalignment, imbalance, or other mechanical problem involved before rotation. Sometimes front and rear tires use different pressures. After rotation, adjust individual tire air pressure to the figures recommended for each wheel position by the vehicle manufacturer.

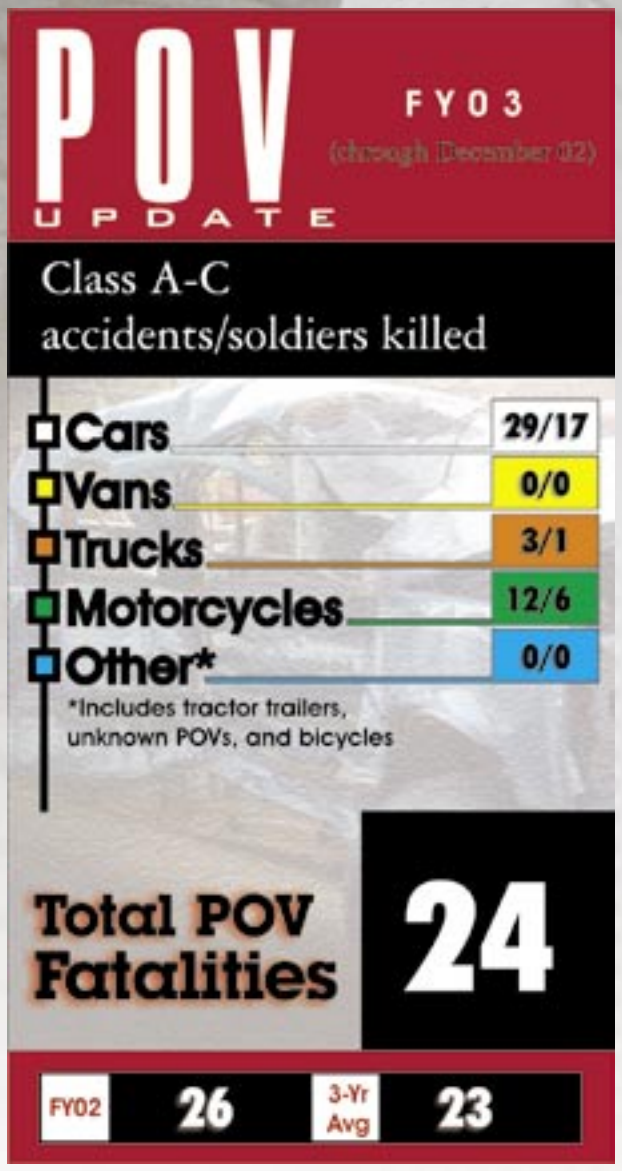
Tread—Advanced and unusual wear can reduce the ability of tread to grip the road in adverse conditions. Visually check your tires for uneven wear, looking for high and low areas or unusually smooth areas. Also check for signs of damage.

Tires must be replaced when the tread is worn down to 1/16 of an inch in order to prevent skidding and hydroplaning. An easy test is to place a penny into a tread groove. If part of Lincoln's head is covered by the tread, you are driving with the proper amount of tread. If you can see all of Lincoln's head, you should buy a new tire.

Built-in tread wear indicators, or "wear bars," which look like narrow strips of smooth rubber across the tread, will appear on the tire when the tread is worn down to 1/16 of an inch. When you see these wear bars, the tire is worn out and should be replaced.

Tires are as important as a seatbelt—if they are maintained properly. Take care of your tires. Your life is riding on them!

Adapted from material found on the Rubber Manufacturers Association Web site, www.rma.org



1st Quarter FY03 Safety of Use and Ground Precautionary Messages

The following is a list of selected safety of use messages (SOUMs) and ground precautionary messages (GPMs) issued by the Army Communications and Electronics Command (CECOM). Complete copies of the SOUMs and GPMs are available on the Army Electronic Product Support Bulletin Board via their Internet Web site at http://aeps.ria.army.mil/.

SOUM-03-01, subject: Army Space Heater (ASH), Electric Powered, Multi-fuel, 120,000 BTU, Model H-120, NSN 4520-01-367-2739 and H-120-1, NSN 4520-01-439-1682, LIN: H00586, TM 9-4520-258-14, Change 2, issue date: 31 October 2002. POCs: Mr. Ralph Lederer, DSN 992-6053, (732) 532-6053, e-mail ralph.lederer@mail1.monmouth.army.mil; Mr. Greg Wesley, DSN 992-0522, (732) 532-0522, e-mail gregory.wesley@mail1.monmouth.army.mil; and Mr. Steve Chan, DSN 992-0084 (ext. 6413), (732) 532-0084 (ext. 6413), e-mail steven.chan@mail1.monmouth.army.mil.

GPM-2003-001, subject: Movement Tracking System (MTS), AN/UYQ-90(V)2, NSN 7010-01-476-0935, LIN C18278, issue date: 11 October 2002. POCs: Mr. Ralston Mims, DSN 687-6646, e-mail mimsr@lee.army.mil; and Mr. Tom Brennan, DSN 992-0084 (ext. 6404), e-mail thomas.brennan@mail1.monmouth.army.mil.

GPM-03-003, subject: 3KW Tactical Quiet Generator (TQG) Set: MEP-831A, NSN 6115-01-285-3012; MEP-832A, NSN 6115-01-287-2431; AN/MJQ-42, NSN 6115-01-322-8583; and AN/MJQ-43, NSN 6115-01-322-8582, issue date: 18 December 2002. POCs: Mr. Mike Payne, DSN 654-3175, (703) 704-3175, e-mail mike.payne@pm-mep.army.mil; Mr. Greg Youll, DSN 992-4748, (732) 532-4748, e-mail dondald.youll@mail1.monmouth.army.mil; Mr. Bob Kea, DSN 992-0872, (732) 532-0872, e-mail bobby.kea@mail1.monmouth.army.mil; and Mr. Steve Chan, DSN 992-0084 (ext. 6413), (732) 532-0084 (ext. 6413), e-mail steven.chan@mail1.monmouth.army.mil.

GPM-03-004, subject: 5KW, 28VDC, Auxiliary Power Unit (APU) MEP 952B, NSN 6115-01-452-6513, TM 9-6115-664-13&P, issue date: 23 December 2002. POCs: Mr. Raymond Billings, DSN 654-3200, (703) 704-3200, e-mail raymond.billings@pm-mep.army.mil; Mr. Greg Youll, DSN 992-4748, (732) 532-4748, e-mail dondald.youll@mail1.monmouth.army.mil; Mr. Nick Petouses, DSN 992-7122, (732) 532-7122, e-mail nicholas.petouses@mail1.monmouth.army.mil; Mr. Bob Kea, DSN 992-0872, (732) 532-0872, e-mail bobby.kea@mail1.monmouth.army.mil; and Mr. Steve Chan, DSN 992-0084 (ext. 6413), (732) 532-0084 (ext. 6413), e-mail steven.chan@mail1.monmouth.army.mil.

GPM-03-006, subject: AN/TSC-154 Secure Mobile Antijam Reliable Tactical Terminal (SMART-T), NSN 5895-01-435-0571, LIN T81733; PU-815/TSC-154 Diesel Engine Generator Set (DEGS), NSN 6115-01-454-6413, issue date: 8 January 2003. POCs: Mr. Edwin Rivera, DSN 992-0974, e-mail edwin.rivera@c3smail.monmouth.army.mil; Mr. Mel Pointer, DSN 992-1922, e-mail pointer.melvin@c3smail.monmouth.army.mil; and Mr. Andrew Burbelo, DSN 992-0084 (ext. 6415), (732) 532-0084 (ext. 6415), e-mail andrew.burbelo@mail1.monmouth.army.mil.

GPM-2003-005, subject: Advanced Field Artillery Tactical Data System (AFATDS) Version 6.3.0 and 6.3.1, issue date 8 January 2003. POCs: Mr. Bun Tse, DSN 992-6734, (732) 532-6734; and Mr. Farid S. Youssef, DSN 992-0084 (ext. 6439), (732) 532-0084 (ext. 6439).

GPM-03-004, subject: 5KW, 28VDC, Auxiliary Power Unit (APU) MEP 952B, NSN 6115-01-452-6, issue date: 8 January 2002. POCs: Mr. Raymond Billings, DSN 654-3200, (703) 704-3200, e-mail raymond.billings@pm-mep.army.mil; Mr. Greg Youll, DSN 992-4748, (732) 532-4748, e-mail dondald.youll@mail1.monmouth.army.mil; Mr. Bob Kea, DSN 992-0872, (732) 532-0872; e-mail bobby.kea@mail1.monmouth.army.mil; and Mr. Steve Chan, DSN 992-0084 (ext. 6413), (732) 532-0084 (ext. 6413), e-mail steven.chan@mail1.monmouth.army.mil.

Q. Can you provide safety information on backpacks for motorcycle riders?

A. Here are some safety and ergonomic considerations for backpack use by motorcycle riders:

- Ensure that the size of the backpack is appropriate for the size of the motorcyclist.
- Motorcyclists should choose a backpack with a padded back that rests against the body.
- Select a backpack with compression straps that allow expansion or compression of the backpack based on load.
- Choose a backpack with a sturdy padded belt and shoulder straps.
- Consider a backpack with load control straps for proper weight balance.
- Some backpacks are available with inflatable straps and lumbar support, which is adjustable to ensure personal comfort.
- Individuals should carry no more than 15 percent of their body weight on their backs. Motorcyclists must load their backpacks to ensure proper balance and maneuverability at all times.
- Choose a backpack with retro-reflective material affixed to it to ensure visibility to other vehicles at night.

Q. We have a question from one of our fire departments regarding the use of JP-5 as a cleaning agent. Is there something in writing that prevents JP-5 from being used as a cleaning agent?

A. Recommend your firefighters cite the Army technical manuals that identify approved solvents to be used for cleaning, rather than trying to pinpoint a document that states JP-5 is prohibited.

From a health perspective, JP-5 (as well as JP-4 and JP-8) can be very harmful. Field Manual (FM) 3-04.301, *Aeromedical Training for Flight Personnel*, Chapter 5, Paragraph 5-29, states: "JP-4, JP-5, and JP-8 are mixtures of hydrocarbons, producing different grades of kerosene. Each JP fuel has a specific vapor pressure and flash point. JP fuels do not contain tetraethyl lead. The recommended threshold limit for JP fuel vapors has been set at 500 parts per million. Toxic symptoms can occur below explosive levels; therefore, JP fuel intoxication can exist even in the absence of a fire hazard. In addition to being an irritant hazard to skin and mucous membranes, excessive inhalation of JP fuels degrades central nervous system functioning. JP fuels, in high enough concentrations, can produce narcotic effects."

A Material Safety Data Sheet (MSDS) on JP-5 provides the following:

Eyes. Contact with liquid or vapor may cause mild irritation.

Skin. May cause skin irritation with prolonged or repeated contact. Practically non-toxic if absorbed following acute (single) exposure. Liquid may be absorbed through the skin in toxic amounts if large areas of skin are repeatedly exposed.

Ingestion. The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure, and even death. Ingestion may cause gastrointestinal disturbances including irritation, nausea, vomiting, and diarrhea, and central nervous system (brain) effects similar to alcohol intoxication. In severe cases tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death may occur.

Inhalation. Excessive exposure may cause irritation to the nose, throat, lungs, and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

You might also suggest to your firefighters that they contact their installation and state environmental management offices, as the practice of using a fuel as a cleaning solvent could already be prohibited from a spill contamination standpoint.

POC: Truman Taylor, Policy and Programs Division, U.S. Army Safety Center, DSN 558-2947, (334) 255-2947, e-mail truman.taylor@safetycenter.army.mil

Personnel Injury

Class A

■ Soldier was killed when he was crushed between the 2½-ton truck and trailer he was working on.

Class B

■ Soldier's hand was amputated and he received cuts and lacerations to his head and chest when a rocket-propelled grenade detonated during misfire procedures.

Class C

■ Soldier sustained fractures to her foot when she lost her grip on the scuba compressed gas cylinder she was carrying up a flight of stairs.

■ Soldier received a contusion to his head when he was struck by the wrench he was using, which slipped off a bolt. SM was servicing a 5-ton dump truck at the time of the accident and pulling on the wrench instead of pushing.

■ Soldier sustained fractures to his clavicle after slipping while putting a camouflage net over a Howitzer. SM required seven stitches to his head in addition to the fractured clavicle. The terrain conditions at the time of the accident were muddy and slippery, and SM's Kevlar was found next to him with the chin strap undone.

■ Soldier sprained his ankle when he came out of his tent and stepped on a large stone.

■ Soldier received a concussion when he was struck by a tent pole. SM had been supervising a work detail unloading material from the back of a 2½-ton truck at the time of the accident.

■ Civilian sustained a contusion to his right hand when he missed the top step of a railcar and fell to the ground. Civilian had been tasked to remove tie-down material on a set of railcars before the accident.

■ Civilian received contusions to his back and knee when he fell into a paint pit. Civilian's right foot was caught in a reclining air supply of his spray pistol, causing the accident.

POV

Class A

■ Soldier was killed when he was struck by a POV while walking along an interstate highway.

■ Soldier was killed when the vehicle he was riding in was rear-ended by a tractor-trailer. SM was in the backseat of the POV at the time of the accident. Another SM was injured in the accident. The civilian drivers of the POV and tractor-trailer were uninjured.

■ Soldier was killed when he lost control of his POV, exited the roadway, attempted to return to the roadway, and the vehicle overturned.

■ SM was killed when her vehicle was hit broadside by another vehicle at an intersection. The civilian driver of the other vehicle was not injured.

■ Soldier was killed when he lost control of his vehicle and the vehicle overturned.

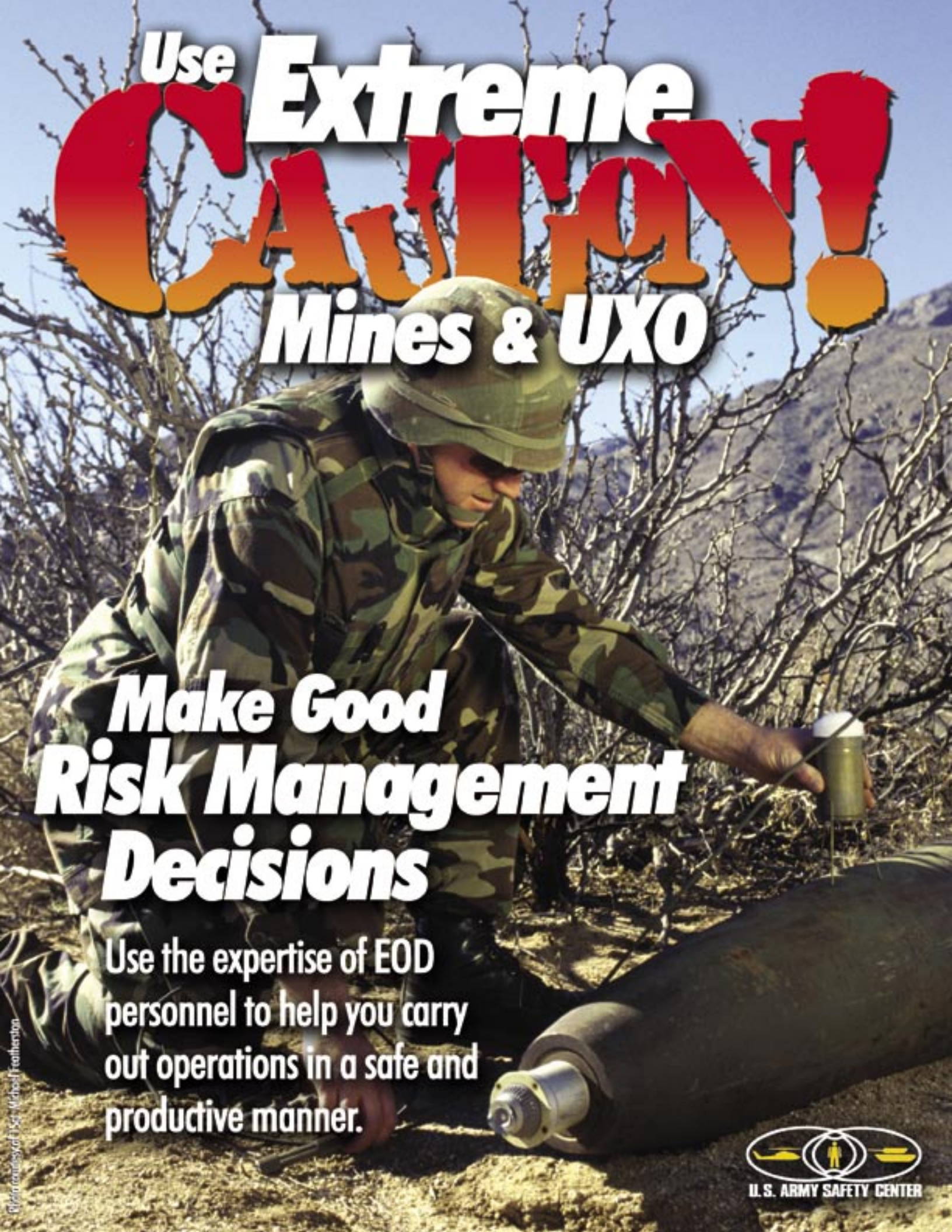
■ Soldier was killed in a POV accident while on PCS leave status. Details of the accident were not provided.

■ Soldier was killed when he lost control of his POV and hit a ravine.

■ Soldier was killed when his POV ran off the roadway, flipped, and struck a tree. SM had fallen asleep at the wheel and was partially ejected from the vehicle. Another SM, who was a passenger in the vehicle, was uninjured.

■ Two soldiers were killed and two others injured when their vehicle collided head-on with a vehicle driven by a civilian. The civilian driver of the other vehicle also was killed.

■ Soldier was killed when his vehicle left the roadway and struck a tree.


Use Extreme
CAUTION!
Mines & UXO
Make Good
Risk Management
Decisions
Use the expertise of EOD personnel to help you carry out operations in a safe and productive manner.
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